



US 20210299209A1

(19) **United States**(12) **Patent Application Publication****Goren et al.**(10) **Pub. No.: US 2021/0299209 A1**(43) **Pub. Date: Sep. 30, 2021**(54) **SYSTEMS, METHODS, AND KITS FOR
DIAGNOSTICS AND TREATMENT OF VIRAL
RESPIRATORY INFECTION**(71) Applicant: **Applied Biology, Inc.**, Irvine, CA (US)(72) Inventors: **Ofer A. Goren**, Irvine, CA (US); **John
McCoy**, Irvine, CA (US)(21) Appl. No.: **17/301,191**(22) Filed: **Mar. 29, 2021****Related U.S. Application Data**

(62) Division of application No. 15/929,788, filed on May 21, 2020.

(60) Provisional application No. 62/704,531, filed on May 14, 2020, provisional application No. 62/704,416, filed on May 8, 2020, provisional application No. 62/704,126, filed on Apr. 22, 2020, provisional application No. 63/004,398, filed on Apr. 2, 2020, provisional application No. 63/004,171, filed on Apr. 2, 2020, provisional application No. 63/001,629, filed on Mar. 30, 2020.

Publication Classification(51) **Int. Cl.**

A61K 38/08 (2006.01)
A61P 31/14 (2006.01)
A61K 31/198 (2006.01)
A61K 31/05 (2006.01)
A61K 31/4164 (2006.01)
A61K 31/573 (2006.01)

A61K 31/4155 (2006.01)**A61K 9/00** (2006.01)**A61K 31/337** (2006.01)**A61K 31/58** (2006.01)**A61K 31/4184** (2006.01)**A61K 31/155** (2006.01)**A61K 31/4166** (2006.01)**A61K 31/473** (2006.01)**A61K 31/167** (2006.01)**A61K 31/122** (2006.01)(52) **U.S. Cl.**

CPC **A61K 38/08** (2013.01); **A61K 31/122**
(2013.01); **A61K 31/198** (2013.01); **A61K**
31/05 (2013.01); **A61K 31/4164** (2013.01);
A61K 31/573 (2013.01); **A61K 31/4155**
(2013.01); **A61K 9/0019** (2013.01); **A61K**
31/337 (2013.01); **A61K 31/58** (2013.01);
A61K 31/4184 (2013.01); **A61K 31/155**
(2013.01); **A61K 31/4166** (2013.01); **A61K**
9/0053 (2013.01); **A61K 31/473** (2013.01);
A61K 31/167 (2013.01); **A61P 31/14**
(2018.01)

(57)

ABSTRACT

Systems, methods, and kits for treating, preventing, and diagnosing viral infection using an androgen mediated pathway are described. Additionally, methods and kits for guiding treatment of viral respiratory disease are described by a method for testing for polymorphisms in the androgen receptor gene. Further, systems and methods for treatment of viral respiratory disease with various anti-androgens is detailed. Finally, systems, methods, and kits for treating, preventing, and diagnosing SARS-CoV-2 (COVID-19) are presented.